

**BEFORE
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Review of the Section 251 Unbundling)	
Obligations of Incumbent Local)	CC Docket No. 01-338
Exchange Carriers)	
)	
Implementation of the Local)	
Competition Provisions of the)	CC Docket No. 96-98
Telecommunications Act of 1996)	
)	
Deployment of Wireline Services)	
Offering Advanced Telecommunications)	
Capability)	CC Docket No. 98-147

**REPLY COMMENTS OF
THE PROGRESS & FREEDOM FOUNDATION**

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Summary

In our initial comments, we urged the Commission to scale back its network unbundling rules in order to promote technology-neutral facilities-based investment in new broadband networks. We demonstrated how this could be done consistent with the statutory goals identified in the Commission's notice. We urged the Commission to revise rules apparently designed to create and protect individual competitors and instead to devise a new regulatory framework that will support development of sustainable market competition.

Drawing from the scholarly literature on investment and capital budgeting, statements from financial analysts and common sense, we presented a coherent analytical framework, what we call the "Net Present Value" view, explicitly and clearly linking the UNE rules to real world drivers of network investment. In this context, we urged the Commission to consider the effects of the UNE rules on cash flow, expected growth, risk, and future opportunities of potential providers of facilities-based network platforms. Using the Net Present Value approach and based on our analysis of the ways in which business managers actually make investment decisions and allocate scarce capital, we showed why the Commission's current overly regulatory and costly UNE regime, with its below book cost TELRIC pricing, adversely affects investment incentives. This adverse impact affects not only the incumbent local exchange companies but the competitive local exchange carriers and providers of other technology based platforms as well.

Our reply comments reiterate the critical impact of the UNE rules and TELRIC prices on incumbent carrier investment incentives. Simply put, no economic or financial theory, no empirical evidence, and no analysis offered in the initial comments in this proceeding shake the unequivocal conclusion that forcing firms to sell output at a loss reduces their incentive to risk scarce capital to build facilities for producing that output. Opponents mount a spirited attack on that basic conclusion – by categorical assertions to the contrary, by invoking phantom economic theories, and by *ad hominem* argument -- but fail to undermine it.

In response to AT&T and others who argue that the Commission should leave in place—or expand—the current “more is better unbundling regime,” we show that the “Industrial Organization” view upon which they rely fundamentally misconstrues the basis for investment decisions. More specifically, the Industrial Organization view holds that investment is driven by rivals' behavior with little or no regard to other effects on financial value of incumbent investment. In contrast to the Net Present Value view we present, the Industrial Organization approach ignores the fundamental distinction between winning customers and making money.

Shareholders care about earnings. Indeed, they are indifferent to winning customers per se and care about that only to the extent that doing so contributes to earnings.

The current expansive UNE regime, with its TELRIC pricing mandate, inhibits facilities investment because the ILECs cannot cover their full costs of even efficient operations. And the incentive to invest in real-world productive capital assets of those who are entitled to share the ILECs' networks at TELRIC prices is inhibited as well. Indeed, as we have learned in recent months from the revelations concerning WorldCom and other companies, CLEC claims concerning "facilities investment" need to be examined with a degree of skepticism. In light of the allegations that WorldCom and possibly other CLECs inaccurately reported line charges as capital expenditures rather than operating expenses, not all expenditures the CLECs put in the "facilities investment" category likely were used for the acquisition of productive assets.

In short, the current UNE rules lead to lower investment in critical network infrastructure and consequent reductions in the consumer welfare the Commission is charged to promote.

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I. INTRODUCTION AND BACKGROUND

The Progress & Freedom Foundation (“PFF” or “Foundation”), a private, non-profit, non-partisan research institution established to study the digital revolution and its implications for public policy, hereby submits these reply comments in this UNE Triennial Review proceeding.¹

In our initial comments, we emphasized the urgent requirement for the Commission to modify substantially its current UNE rules because they have had the practical effect of creating competitors and the mere appearance of market competition. We urged the Commission to focus instead on fashioning rules to facilitate the development of sustainable competitive processes, including those that encourage efficient resource allocation among different “modes” or technology platforms.

Recent financial market developments in the telecom sector support our claim that the market structure created by the Commission's UNE rules is simply not sustainable. The failure of dozens of CLECs and the disappearance of yet uncounted billions of dollars of debt and equity capital is an unmistakable indication of the failure of the Commission's efforts to manufacture competition by creating a class of competitive firms dependent on expanding regulatory support and protection.² Market developments have confirmed our contention that creating competitors for the sake of creating competitors was a policy destined to fail.

And, importantly, comments submitted by the associations that represent the bulk of this nation's high-tech companies speak volumes about the need for a less intrusive and distorting regulatory regime. The need for a course correction is recognized by nearly all but those who believe they stand to directly benefit by the continued government-mandated subsidization of their businesses. There is a reason why the High Tech Broadband Coalition, which says it represents over 15,000 *non-carrier* companies that participate in the broadband "value chain", urges the Commission in this proceeding to "refrain from imposing unbundling obligations on new last mile broadband facilities, including fiber and DSL electronics deployed on the customer side of the central office."³ The reason is firmly grounded in the desire of these non-carrier companies to see an economic recovery led by sales of the

¹ The views contained in these comments are the views of the authors and do not necessarily reflect the views of the directors, officers, or staff of the Foundation.

² See Thomas M. Lenard, "The Economics of the Telecom Meltdown, Progress and Freedom Foundation, *Progress on Point*, Release 9.6, February 2002; Randolph J. May, "The Telecom Meltdown: Causes and Cures, Progress and Freedom Foundation, *Progress on Point*, Release 9.18, May 2002.

³ Notice of Ex Parte Presentation, High Tech Broadband Coalition, CC Docket No. 01-338, June 27, 2002. By "value chain", they mean they have no dog in the fight between CLECs and ILECs. They just have the self-interested desire to sell as much of their goods and services as they can to companies who can pay for them in sound money.

computers, telecommunications equipment, semiconductors, consumer electronics, and software which they make available.

It is the same reason—the desire to sell more facilities—that impelled the Telecommunications Industry Association, which says it is the principal voice for communications and information technology manufacturers and suppliers, to tell the Commission that “[a]n expeditious decision to not apply UNE obligations to ILEC broadband facilities likely will provide a much-needed jumpstart for the technology equipment manufacturing industry.”⁴ And it is for the same reason that the Fiber-To-The-Home Council, a 68 member association led by the likes of Corning and Cisco “representing the entire FTTH value chain,” informed the Commission that investment in fiber to the home “is being significantly hampered” by the Commission’s UNE rules.⁵ The Council implored the Commission to “take immediate action to remove this barrier.”⁶

II. THE COMMISSION MUST CHANGE COURSE TO ENCOURAGE INVESTMENT AND SUSTAINABLE COMPETITION

We urge the Commission to reflect in new UNE rules the fundamental truism that facilities-based local competition among a very large number of firms using the telephone network platform is not possible under current and foreseeable technological and economic conditions. The record is without conflict on the importance of achieving minimal scale and scope economies as a necessary condition for long-term survival. In his declaration attached to AT&T’s comments, Professor Willig makes the point most compellingly:

⁴ Letter to Chairman Powell from Telecommunications Industry Association, CC Docket No. 01-338, June 4, 2002.

⁵ Fiber-To-The-Home Council Comments, at 2.

The economic reality is that – unless and until a CLEC obtains traffic volumes approaching the ILECs – the economies of scale that characterize the ILECs’ loop, switching and transport facilities and their “first mover advantages” mean that an incumbent ILEC will have substantially lower unit costs than any CLEC in virtually all circumstances and dramatically lower unit costs (suggestive of natural monopolies) in all but relatively unusual circumstances...Foremost, last mile and other local transmission facilities have natural monopoly characteristics. CLEC investment can only realistically occur in rare and occasional circumstances in which there are point to point routes where sufficient traffic can be aggregated to afford the CLEC economies of scale comparable to the ILECs.⁷

There is no question that scale and scope economies in the market for local network services are a constraint on the number of viable competitors that can thrive without the benefit of substantial and growing government support and regulatorily-mandated arbitrage opportunities. Moreover, these selfsame economies give the lie to assertions occurring over and over in the comments to the effect that UNEs are merely transitional devices to full-scale facilities-based competition.⁸ A large number of facilities-based firms would not materialize in response to natural market forces and the Commission cannot make it happen without effectuating by regulatory fiat gross resource misallocation and waste in this very important sector of the economy. Thus, many of the dozens of startups must be allowed to fail as a part of the operation of normal market processes.⁹

⁶ Fiber-To-The Home Council Comments, at 2.

⁷ Declaration of Robert D. Willig, Attachment F, at 8, AT&T Comments, April 5, 2002.

⁸ See, e.g., AT&T Comments, at 54-55; Z-Tel Comments, at 72; Association for Local Telecommunications Services, et al., at 42.

⁹ Professor Willig lists 37 bankruptcy announcements by CLECs from August 1, 2000 to February 25, 2002. See Willig Declaration, at Table 2 on p. 48. Many of these companies professed national aspirations and were underwritten by investors who anticipated expansion to national footprints – without which projected revenue growth and earnings targets were simply not achievable. It is inconceivable, and inconsistent with underlying cost conditions, that all these business plans could be realized.

Nevertheless, the Commission's current UNE rules and TELRIC ratemaking standard, is based on the presumption that if only the UNE rules are fine-tuned in a sufficiently-expansive way, then the market will in the long run support a large number of competitors without regulatory intervention. While that is the apparent conclusion of several commenters, there is no support in economic theory, in the record of this proceeding, or in recent industry experience, for that proposition.

In sum, the Commission must recognize that the large number of entrants its policies have spawned were and are not sustainable through their own efforts, but require continuing and (apparently) enlarged government-administered subsidies for survival. In view of the likely splintering of effective demand for broadband services among different platforms – telephone, cable, satellite, fixed wireless – production economies impose sharp limitations on the number of providers using ILEC plant. The Commission must take account of the limitations on market structure imposed by techno-economic cost considerations and not presume to create and perpetuate a market structure that is not economically feasible and independently sustainable in the long run.¹⁰

III. THE COMMISSION SHOULD REJECT AT&T'S "INDUSTRIAL ORGANIZATION" APPROACH IN FAVOR OF PFF'S "NET PRESENT VALUE" APPROACH

Drawing from standard analyses of the drivers of investment and principles derived from widely used techniques of capital budgeting, our initial comments set forth

¹⁰ Real market processes, unlike regulatory ones, are very impersonal. The winnowing process has firms entering and firms failing. Professor Clark said it best over forty years ago: "One of the more unpleasant services expected of competition is the elimination of inefficient firms, products and processes by a test more impersonal and, one may assume, more ruthless, than would be likely to be followed by public

a summary of the main determinants of investment in network plant and equipment. Relying on a variety of mainstream finance and investment texts and articles – reporting both theoretical and empirical analyses – we concluded that the Commission could reliably weigh the impact of its UNE rules and proposed revisions on investment by telco incumbents; by entrants using (wholly or in part) the incumbent telcos’ platform; and, by rivals using other (wireless, cable, satellite, etc.) platforms.

We urged the Commission to do so by considering the effect of the UNE rules on the net present value (NPV) of investment by each and the future wealth generating opportunities created or destroyed thereby.¹¹ We also emphasized that the net present value of a given investment in plant and equipment is derived from projections of expected earnings, growth, and the risk associated with the investment.¹²

In a real sense, the comments opposing any curtailment of the current expansive UNE regime are not supported by any formal consideration of mainstream determinants of investment or the rich empirical and conceptual literature discussing them. They are variously based on conjecture, *ad hominem* argumentation, and very frequently bare assertions without clear foundation.

Nevertheless, those, like AT&T, opposing any retreat from what the D.C. Circuit recently referred to as the “more unbundling is better” regime¹³ do offer a view concerning the relationship between the UNE rules and the incentives of firms to invest

agencies, if they were charged with this responsibility.” John Maurice Clark, *COMPETITION AS A DYNAMIC PROCESS*, The Brookings Institution, Washington, DC, 1961, p. 81.

¹¹ See PFF Comments, at 15-31.

¹² PFF Comments, at 19. (“[T]he value added by investing is equal to the NPV of the investment, which is a function of risk, return and growth, plus the sum over all future periods of the value of options created or destroyed by the decision to invest.”)

¹³ *United States Telecom Association v. FCC*, No. 00-1012 (D.C. Cir. May 24, 2002), at Slip Op., at 28.

in network facilities that is quite distinct from the one we have offered, and the remainder of these comments will largely focus on this difference.

A. The Net Present Value View.

The view supported in our initial comments is that investment by ILECs is positively related to UNE prices – higher UNE prices imply more revenue from sales of UNEs to competitors, lower loss of market share and revenue to competitors, less market risk, and higher long term growth. We will refer to this framework and its emphasis on financial values as the “NPV view” of investment.

Relying on data from ILEC financial reports and using regulated prices for UNEs in various jurisdictions, we showed that UNE-P rates fell far short of both total operating cost and average revenue per line sold to end users for each of the four largest ILECs.¹⁴ That analysis provides the core of the view, derived from traditional capital budgeting analysis and widespread corporate practice, that ILECs are discouraged from investing in facilities when and if they are required to make such facilities available at less than cost. Indeed, our analysis showed that UNE rates provide no coverage of capital costs and in fact fall short of compensating ILECs for operating costs incurred. For example, we showed that the financial impact on BellSouth of sale of a full UNE-P was a shortfall of 58% of revenue received if it were sold directly to end users, a shortfall of 41% below full coverage on operating cost, and no contribution whatsoever to interest, taxes, depreciation and amortization, and returns to risk taking equity providers.¹⁵

The Corning--CMSG Study. The “NPV view” articulated in our comments finds persuasive support in the comments of Corning, Inc. and in a study by the Cambridge

¹⁴ See PFF Comments, at 21-26.

¹⁵ See PFF Comments, at 12.

Strategic Management Group (“CSMG Study”) appended thereto. Utilizing a sample of wire centers and data mirrored from actual ILEC operations, CSMG inquires specifically about the impact of the unbundling rules on investment required to allow deployment by ILECs of fiber-to-the-home (“FTTH”).¹⁶ Corning says that fiber-to-the-home “enables download speeds an order of magnitude higher than those provided by DSL or cable, offering the possibility of 155 Mbps transmissions downstream and 4 Mbps transmissions upstream.”¹⁷ Corning also reports that FTTH systems are available and being employed today “for costs similar to or less than laying new copper plant.”¹⁸ The Fiber-to-Home Council provides information in its comments on completed or planned deployments, and it reports that today there are only 15,298 homes connected by FTTH networks. Of these, the incumbent LECs are involved in only one FTTH project with 400 homes.¹⁹

The CMSG study uses operating data from 1500 wire centers in Texas; actual demographic data and network characteristics associated with the wire centers; third party market forecasts; mainstream estimates of capital costs; equipment costs from actual transactions; and real world operating expenses. Using these current market-generated data, the CMSG Study constructs two scenarios for estimating the financial returns of ILEC FTTH investment – a Free Market Scenario based on the assumption of no UNE regulations and a Regulated Market Scenario which models the cost, revenue and incentive effects based on the existing UNE regulations. By calculating net present

¹⁶See Cambridge Strategic Management Group, “Assessing the Impact of Regulation on Deployment of Fiber to the Home: A Comparative Business Case Analysis”, April 5, 2002. Appendix to Comments of Corning, Inc.

¹⁷ Corning Comments, at 12-13.

¹⁸ Corning Comments, at 13.

¹⁹ Fiber-To-The-Home Council, at 3 and Attachment B.

value and probable investment under each scenario, CMSG derives an estimate of the reduction in network investment attributable to the UNE regulations. After considering incremental revenue, incremental operating costs and project capital expenditures, CMSG asks the core question: “Is Central Office NPV positive or negative?”

The CMSG methodology is entirely consistent with that we proposed in our initial comments. The NPV method used by CMSG involves estimating incremental capital expenditures, incremental operating costs, and incremental revenue with and without the UNE regulations. The difference between the two scenarios track for the most part the analysis we offered in our initial comments. Those differences stem from a) lowered revenue from sales – reflecting the difference between revenue from an end user and revenue from a CLEC obtaining facilities under the UNE rules; b) the added capital and operating costs of serving a CLEC relative to an end user; and c) the added market risk assigned to the investment project as a result of subsidizing the entry of competitors.

The results of the CMSG analysis follow directly from the unambiguous financial impacts on the serving ILEC. First, the UNE requirements reduce revenue for the incumbent because lost retail sales are only partially compensated by increased wholesale revenue with the difference proportional to the UNE discount.²⁰ Second, the detailed UNE regulations raise operating costs and required capital expenditures. Finally, there is an increase in the incumbent’s cost of capital due to the increased market risk associated with the requirements to provide facilities at below cost and to underwrite capital costs for expansion of competitors.

²⁰This result is identical to that derived in our initial comments from another data set. See PFF Comments, at 21-27, and especially Table 1.

CMSG finds that, taken together, lowered revenue, increased costs, and higher risk result in lower cash flow, reduced growth, higher discount rates and lowered net present value (NPV) for all FTTH-related investments. The NPV reduction means that some central offices that otherwise might have been upgraded for FTTH in the Free Market Scenario – in the absence of the UNE requirements – will not be supported in the Regulated Market Scenario.

The effects of the regulation-induced investment reduction in FTTH are measured by CMSG in two ways – percent of central offices deployed with FTTH capability and percent of households passed by FTTH facilities. Under the base case, the percent of households served by fiber is 31% under the Free Market Scenario and 5% under the Regulated Market Scenario. Under more optimistic economic assumptions, household penetration for fiber increases to 41% in a free market and 17% under regulation.²¹ Under regulation, CMSG projects that only 1% of central offices will deploy FTTH capability, but the count would increase to 8% under free market assumptions.²² As Corning put it in its comments, “six times more homes would have access to fiber-to the-home in the free market scenario versus the regulated scenario.”²³

Recognizing the similarity of its sample of Texas central offices to the national universe, CMSG projects the differences in FTTH investment under the two scenarios to derive a nationwide measure of suppression of ILEC investment under the UNE rules. When extrapolated to the entire U.S., the UNE rules are estimated to reduce ILEC

²¹ See CSMG Study, at 4.

²² See CSMG Study, at 4.

²³ Corning Comments, at 8.

investment by nearly \$40 billion (from \$44.6 B in the Free Market case to \$5.1B in the Regulated Market case) over the next 10 years.

In sum, the method employed by the CMSG study is consistent with the way investment decisions are made by rational businessmen. Small wonder that Corning, which rightly claims that its experience and position in the fiber industry gives it a unique perspective, concludes that: “In order to spur innovation and development of new technologies, Corning believes in the broadest possible deregulation.”²⁴ Presumably, if Corning thought it would sell more fiber if the Commission continued its “more is better unbundling regime,” it would say so. The CMSG Study results confirm yet again that the current UNE regime is a powerful inhibitor of ILEC (and CLEC)²⁵ investment in FTTH facilities and, therefore, denies to a substantial portion of the American public the services that would be provided over such facilities.

B. The Industrial Organization View.

The alternative view put forward by AT&T and other CLECs posits that investment is driven by market structure generally; by potential and new competition; and by fear of loss of market share to rivals. This Industrial Organization, or “I-O View”, holds that investment is driven by rivals’ behavior with little or no regard to other effects on financial value of incumbent investment. This view of the UNE regime focuses almost exclusively on the role of competition – that is, the behavior of rivals – in considering investment incentives. On behalf of AT&T, Professor Willig explains:

²⁴Corning Comments, at 5.

²⁵As Corning points out in its comments, “[i]n addition to restricting ILEC build out, CMSG concludes that mandatory unbundling ‘provides incentives for CLECs to piggyback on ILEC fiber builds, rather than constructing competitive facilities of their own.’” Corning Comments, at 9, quoting from CMSG Study, at 30.

By this line of reasoning, facilities investment is both costly and risky. ILEC providers are more reluctant to undertake new investment when they face less risk that failure to invest will persuade their customers to defect to competing providers. When UNE prices are high, entry by CLEC providers is diminished, competitive pressures are relieved and investment is less compelling. When UNE prices are low, CLEC entry is encouraged and the resulting elevated level of competition induces greater ILEC investment because it is more necessary for market place success.²⁶

Professor Willig's declaration includes an appendix describing the method and reporting the results of an econometric analysis which purports to test the validity of these competing views of the determinants of investment generally and, more particularly, the effect of the current UNE regime on investment by CLECs and ILECs.

Consider first the logic of Professor Willig's theory of investment. Shorn of pretension, this model posits that firms invest to keep competitors from gaining market share. Period! Now, there is no disputing that competition, when it brings with it the threat of loss of earnings, *may* act as an investment incentive. Whether it will depends on attendant circumstances. There is a difference between saying that competition matters as an incentive to invest and saying that *only* competition matters to investors and capital budgeters.

The "I-O View" ignores the fundamental distinction between winning customers and making money. Shareholders care about earnings – about making money. They are indifferent to winning customers *per se* and care about that only to the extent that doing so contributes to overall earnings. By emphasizing in the first instance the goal of

²⁶ Willig Declaration, Appendix 2, at 1.

winning customers and ignoring the importance of generating earnings, the Willig model fundamentally misconstrues the basis for investment.²⁷

Professor Willig states: “When UNE prices are low, CLEC entry is encouraged and the resulting elevated level of competition induces greater ILEC investment because it is more necessary for market place success.”²⁸ But firms pursue earnings, and there can be no long term “marketplace success” without earnings. If the Willig formulation is true, should it not also be true that reducing prices further will induce even more competition and even more investment and “market place success” by ILECs? If so, under this theory, the UNE price that would maximize ILEC investment would appear to be zero!

To be sure, Professor Willig does not explicitly say that. But the logic of the theory he puts forth – lowering UNE prices increases the incentive for ILECs to invest – pushes the Commission inexorably in that direction. If not, then he is obliged to explain at what point lowering UNE prices changes from a positive to a negative investment incentive.

The element missing from the “I-O view” is the central role of earnings as an incentive for investment. It is correct to say that increased competition will increase the incentive to invest if, when all effects are considered, such investment will increase

²⁷ We addressed this in our initial comments as follows: “Clearly, the UNE rules in the first instance create financial harm [by forcing the firm to charge roughly half what it otherwise would] and an associated disincentive to invest. From whence might come the offsetting benefit or incentive to invest? In the case of loss of revenue, customers, or market share to firms using another technology platform, an ILEC could invest in new, better facilities and improve service as a means of attracting users back to the telephone platform and recapturing the lost value. In the case of shareholder value lost to UNE based competitors, however, no capital improvement or improvement in the quality of ILEC networks can be used as a competitive device to recapture market share loss, because any such improvement must be made available to UNE-based competitors. Thus, every market advantage that might be created by an improvement in ILEC infrastructure is substantially, if not fully, cancelled by the fact that the advantage will be more than offset by the sharing requirement.” PFF Comments, at 26-27.

earnings. But, if responding to competition reduces earnings, then economic and financial theory predicts that real investment will be lower than it otherwise would be.

The “I-O view” ignores the central fact that, given the participation of incumbents in both retail and wholesale markets, an excessively broad UNE regime reduces incumbent earnings in the first instance and creates/sustains a “low-cost” rival whose rates limit incumbents’ ability to recover the lost earnings from retail customers. There is simply no way for firms to make up losses on each unit of sales at wholesale by increasing the number of units sold or prices charged at retail.²⁹

Notwithstanding the logical infirmities of the “I-O view”, Professor Willig nonetheless purports to find a statistically significant negative relationship between the level of UNE rates and the level of ILEC investment. We leave to others a detailed critique of the model’s specification and estimation, but call to the Commission’s attention the following general observations.

First, in some cases Professor Willig uses only data describing AT&T investment, not the total for all CLECs. Second, not all states are included in the analysis and neither the basis for the sample design, nor the implications of the sample’s composition, are discussed. Third, the true measure of the effect of UNE rates is its impact on the change in investment, not, as in the Willig model, the level of

²⁸ Willig Declaration, Appendix 2, at 1.

²⁹ The logic of the “I-O view” suggests that the way to encourage any vertically integrated supplier to invest more in upstream activities is to force the supplier to sell intermediate goods at lower prices. Thus, this investment model suggests that petroleum refiners with retail gasoline outlets would increase refining capacity if they were required to lower price to rivals that specialize in retail gasoline sales; or that automobile companies would find investment in manufacturing facilities more desirable if they were required to reduce the sticker price to non-affiliated dealers; or that media companies would produce more content, if they were required to give it away to non integrated competitors in downstream markets – theaters, TV stations, CATV systems. It is hard to square the theory with common sense.

investment.³⁰ In this regard, it is worth pointing out that CLEC claims concerning “investment” levels need to be examined with a degree of skepticism, especially in light of the allegations that WorldCom and possibly other telecom companies have inaccurately reported operating expenses as capital expenditures.³¹ In other words, not all expenditures that CLECs’ claim as “facilities investment” necessarily were used to acquire productive capital assets; rather, some likely were lease charges for access lines.

Fourth, the Willig model only examines two years of data, 1999 and 2000, without rationalizing that choice or exploring its implications. Finally, it is fundamental to interpreting the results of the model that correlation, even if statistically significant, does not equate to causation. Thus, the model does not, nor does Willig or AT&T claim it does, posit that lowering UNE rates will cause ILECs to invest more. The model may be consistent with that expectation, but it certainly cannot be the basis for predicting such a sequence of events.³²

³⁰ In invalidating the Commission’s UNE rules in the recent *USTA* decision, the D.C. Circuit explained that “the existence of investment of a specified level tells little or nothing about the incentive effects. The question is how such investment compares with what would have occurred in the absence of the prospect of unbundling.” *United States Telecom Association v. FCC*, No. 1012 (D.C. Cir. May 24, 2002), at 27. We understand that the Commission has filed a rehearing petition with the D.C. Circuit on the basis that the *USTA* decision is “fundamentally in tension” with the Supreme Court’s recent decision in *Verizon Telephone Cos. v. FCC*, 122 S. Ct. 1646 (2002). The Commission’s rehearing petition is unfortunate. While there is “tension” between the two decisions, the Commission almost certainly still possesses discretion under the *Verizon* case to substantially curtail its current UNE regime. The Commission should hope that by virtue of choosing to continue to litigate the *USTA* decision whatever “tension” that exists is not resolved in a way that curtails its discretion to move in a deregulatory direction.

³¹ See, e.g., “Internal Documents Suggest WorldCom Knew of Violations,” *Wall Street Journal*, July 16, 2002, at A3; “S.E.C. Scrutinizing Another Company,” *New York Times*, February 9, 2002, at A1.

³² On the issue of confusing correlation with causation, we also note the frequent assertion that ILECs did not invest in broadband facilities until the current generation of CLECs were created and began to invest, the implication being that ILECs invested because CLECs did. We have not – nor have others so far as we know – performed a careful econometric analysis of the timing of these events. But, it is instructive to point out that a very important “cause” of investment in broad(er) band facilities by both classes of firms was the introduction of a user-friendly browser by Netscape in 1995. Without more careful analysis than we could find in the comments we cannot say whether ILECs were responding to CLECs, or whether both were responding to the increased demand occasioned by the introduction and user-friendly browsers.

IV. UNEs PROVIDED UNDER TELRIC ARE NOT “PROFITABLE”

Some commenters continue to propound the fiction that ILECs can earn risk-adjusted, market rates of return from sales to CLECs of UNEs at forward-looking TELRIC rates, when such rates are “based on the use of the most efficient telecommunications technology currently available.”³³ While the Act provides that interconnection charges “may include a reasonable profit,”³⁴ the conceptual basis for TELRIC rates virtually assures that incumbents cannot – if all rates are set at TELRIC levels -- fully recover their capital expenditures and a fair return over the lifetime of the investment.³⁵ That result is unavoidable in a technologically dynamic marketplace in which costs are falling. A firm is certain to be using plant and production techniques that are less efficient and more costly than that available from the most efficient, lowest cost technology upon which TELRIC rates are based.

It is nonsense to suppose that rational businessmen will continuously scrap plant and equipment, without regard to its accounting and economic lives, in order to maintain the technologically most up-to-date plant.³⁶ And no generally recognized economic theory of firm behavior of which we are aware predicts that they would. The more economically rational response is that firms will try to invest in ways to build in adaptability to technological change by allowing marginal improvements to be made to continuously obsolescing plant. This means as a practical matter that some plant – maybe even most of it -- will be technologically obsolete, but still have a significant

³³ 47 C.F.R. § 51.505 (b)(1). See, e.g., ALTS, at 119-20; WorldCom, at 69-70.

³⁴ 47 U.S.C. § 251(d)(1)(B).

³⁵ This conclusion suggests that ILECs must raise rates above TELRIC levels to other users in order to meet long-term constraints that revenues cover costs. The question then becomes: what classes of users are subsidizing wholesale sales to CLECs?

economically useful life. Such plant will be replaced if and when the present value of the savings from adopting new technology exceeds the unrecovered value occasioned by scrapping technologically obsolete, but economically useful, plant in service.³⁷ The result of such investment behavior by profit-maximizing competitive firms is that they will not cover the costs of efficient operations if they are required – as ILECs are -- to price output at TELRIC rates.

V. CONCLUSION

In these reply comments and in our original comments, we have demonstrated that firms in the real world rely on well-established financial and capital budgeting principles to guide their investment decisions. The current unduly expansive UNE regime, with its TELRIC-mandated rates, does not allow even efficient firms to recover the costs of making UNEs available. The current rules constitute a substantial barrier to investment by major potential infrastructure providers, incumbent telephone companies

³⁶ For a different but corroborating analysis, see, e.g., Alfred E. Kahn, *WHOM THE GODS WOULD DESTROY, OR HOW NOT TO DEREGULATE*, AEI-Brookings Joint Center for Regulatory Studies, Washington, DC, 2001, pp. 4-6.

³⁷ For a good summary of the economics of investment for replacement, see Erik Bohlin, *ECONOMICS OF MANAGEMENT OF INVESTMENTS: AN INTERNATIONAL INVESTIGATION OF NEW TECHNOLOGY DECISION-MAKING IN TELECOMMUNICATIONS*, Chalmers University of Technology, Goteburg, Sweden, 1995, pp. 302-322 and references noted therein. In summary, suffice it to say that a simple model of replacement suggesting that rational firms in competitive markets scrap existing plant and replace it as new technology becomes available is simply wrong and would be wildly amusing were it not the basis for the Commission's UNE prices. Notable in the current context is Professor Bohlin's reference to Professor Salter suggesting the conditions for plant replacement in the simplest case: "[T]he operating costs of the old technology must exceed the total of operating costs of a new technology plus its capital costs (including a normal rate of return)." See W.E.G. Salter, *PRODUCTIVITY AND TECHNICAL CHANGE*, Cambridge University Press, Cambridge, 1969, p. 57.

and new entrants alike, regardless of technology platform. In short, the current rules lead to lower investment in critical network infrastructure and consequent reductions in the consumer welfare the Commission is charged to promote.

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